

The Danaid butterflies of South Viet-Nam

KAZUHIKO MORISHITA

2-2-16, Shinjuku, Zushi City, Kanagawaken

This study is based on the remarkably complete collection of the Danaid butterflies made by Mr. SADANOBU INOUE during his stay in Saigon, South Viet-Nam, where he served as the executive of a Japanese trading company from August 18, 1958 till September 27, 1962.

He indefatigably made collecting trips to many parts of South Viet-Nam, and almost all of the specimens treated herein were captured by himself, although a small number of them were caught by his faithful co-operator, Mr. TRINH THIEU KINH and his men. His collecting reseaches were made without any preference to a certain month or period through four years. Besides, he made no particular choice in collecting species so far as the Danaid butterflies were concerned. Thus the large numbers of specimens in commoner species make some statistic consideration possible.

In October, 1962, he returned to the post in the head-office, Osaka, Japan. Having finished major classifications of the Vietnamese Rhopalocera, he allowed me to examine this marvellous collection of Danaid butterflies.

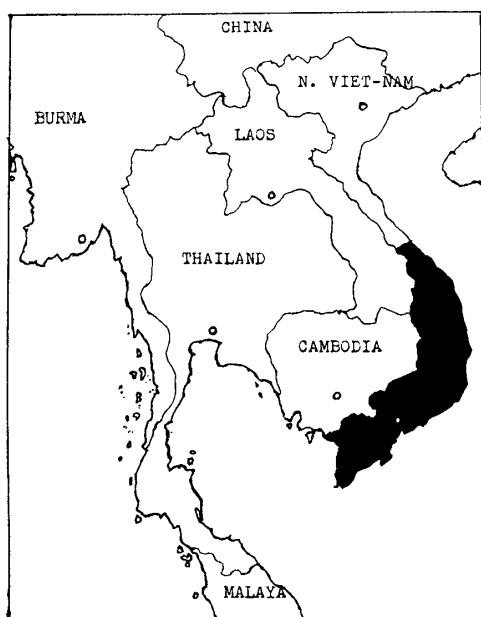


Fig. 1. Location of South Viet-Nam.

adjacent islands, and each selected district represents the minor area with the homogeneous fauna of butterflies. The comparison of the number of the species in subject area with those of surrounding districts will point out the relative richness of Danaidae in South Viet-Nam.

In Peninsular Siam (including KEDAWI) the Danaid butterflies of Asiatic Continent attain their maximum developments. There occur as much as 33 species including a few purely Malaysian species. It should be concluded that the Continental Danaidae had the centre of distribution in this area, apart from the Malaysian factors such as *lynceus* group of *Idea* or *Ideopsis*.

Due to its location, South Viet-Nam also contains several purely Malaysian Danaid butterflies in its fauna, namely *Parantica aspasia*, *Radena vulgaris*, *Euploea crameri*, *Euploea eyndhovii*, etc.

Abundance of the Continental Danaidae plus Malaysian species—Such will be the feature of the Danaid fauna of South Viet-Nam. But the absence of *Idea* species decreases the variety of the

On this family of the butterflies, ROGER MÉTAYE published a booklet in Saigon. This paper, 'Les Danainae du Viet-Nam' (1958), seems to be the latest. His work is fine and written systematically, although classifications and nomenclatures of the species are to be revised to a considerable extent.

In compiling this paper I tender my warmest thanks to Mr. SADANOBU INOUE, now in Congo, Africa, for his generosity. I also acknowledge my heartfelt thanks to Dr. TAKASHI SHIRŌZU, Kyushu University, for his invariable guidance. To Dr. YOSHIHIKO KUROSAWA, National Science Museum of Tokyo, and Mr. TARO IWASE, President of L S J, I am deeply grateful for their kind advices and supports.

General View

South Viet-Nam is fairly rich in Danaid butterflies. The number of the species inhabiting there runs up 28 in total as shown on the Table I. The table includes all the specis known to occur in Asiatic Mainland with its

Table 1. Distribution of Danaidae within Asiatic Mainland incl. adjacent Islands

Genus	Species	Ceylon	S. India	N. India	For-mosa	N. Vi-etnam	S. Vi-etnam	C. Tha-iland	Penin-sular Siam : Kedawi	Malaya proper
<i>Panlymnas</i>	<i>chrysippus</i>	○	○	○	○	○	○	○	○	○
<i>Salatura</i>	<i>genutia</i>	○	○	○	○	○	○	○	○	○
	<i>melanippus</i>				○		○	○	○	○
	<i>thoe affinis</i>						○	○	○	○
<i>Tirumala</i>	<i>limniace</i>	○	○	○	○	○	○	○	○	△
	<i>gautama hamata</i>	○	○	○	○	○	○	○	○	○
<i>Parantica</i>	<i>aglea</i>	○	○	○	○	○	○	○	○	○
	<i>agleoides</i>						○	○	○	○
	<i>aspasia</i>						○	○	○	○
	<i>melaneus</i>			○	○	○	○	○	○	○
	<i>sita</i>			○	○	○	○	○	○	○
	<i>taprobana</i>	○								
	<i>nilgiriensis</i>		○							
<i>Rade-na</i>	<i>similis</i>	○			○	○	○	○	○	
	<i>vulgaris juvena</i>					○	○	○	○	○
<i>Ideopsis</i>	<i>gaura</i>								○	○
<i>Danaus</i> Group : Sub-total		7	6	7	9	10	14	14	15	13
<i>Idea</i>	<i>lynceus</i>	○	○					△	○	○
	<i>jasonia</i>								○	○
	<i>hypermnestra leuconoe</i>				○			○	○	○
<i>Idea</i> Group : Sub-Total		1	1	0	1	0	0	1	3	4
<i>Euploea</i>	<i>modesta</i>					○	○	○	○	○
	<i>crameri</i>						○	○	○	○
	<i>redtenbacheri</i>				○		○	○	○	○
	<i>core</i>	○	○	○		○	○	○	○	○
	<i>algea</i>			○			○	○	○	○
	<i>doubledayi</i>			○		○	○	○	○	○
	<i>eyndhovii</i>			○			○	○	○	○
	<i>syvester</i>	○	○	○	○	○	○	○	○	○
	<i>multiciber</i>		○	○	○	○	○	○	○	○
	<i>tulliolus</i>				○	○	○	○	○	○
	<i>phaenareta</i>	○			○		○	○	○	○
	<i>midamus</i>			○		○	○	○	○	○
	<i>klugii</i>	○	○	○		○	○	○	○	○
	<i>leucostictos</i>				○	○		○	○	○
	<i>diocletianus</i>			○		○	○	○	○	○
<i>Euploea</i> Group : Sub-total		4	4	8	6	10	14	13	15	13
Total Species		12	11	15	16	20	28	28	33	30

Notes 1. The table includes all species known to occur in Asiatic Mainland incl. adjacent Islands.

2. Following species described within the area are excluded for the doubtful specific status.

Salatura yunchingkinus (Formosa), *Euploea orontobates* (Thai).

Danaidae of South Viet-Nam. However, *Idea leuconoe*, denizen of the coastal forest of Sriracha, S. E. Thailand, may have reached the south-west extreme of Viet-Nam.

A widely spread *Euploea* species found in North Viet-Nam, and without an authentic record in

South Viet-Nam, is *Euploea leucostictos*. There can be little doubt about the occurrence of the species in the northern districts of South Viet-Nam though no specimen was found in Mr. INOUE's collection.



Fig. 2. Mr. S. INOUE (right) and Mr. TRINH THIEU KINH in Vietnamese forest.

List of Species with description of new subspecies

In the following list brief descriptions of the species are given with a view to make their identifications possible. Localities of the species are based upon Mr. INOUE's data and Collector's name is INOUE himself unless otherwise specified. All the species are illustrated in figures except two commonest species, *Panlymnas chrysippus* and *Salatura genutia*, and *Euploea doubledayi* which he did not collect in South Viet-Nam.

1. *Panlymnas chrysippus chrysippus* (LINNAEUS)

Upperside, fulvous orange, apex broadly, termen narrowly black with white dots. The former crossed by white bar. Veins not blackened, with 3 black spots bordering hindwing cell.

Loc. Trai Bi, Dinh Quan, Cap St. Jaques, etc. Common.

2. *Salatura genutia genutia* (CRAMER)

Upperside, almost same colouring as *P. chrysippus* but veins strongly blackened.

Loc. Saigon, Dinh Quan, Trang Bom, Lai Thieu, etc. Common. Monthly capture through four years (from Aug. 1958 to Sept. 1962) as follows.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	T
♂	14	9	4	12	3	14	12	17	4	0	5	3	97
♀	13	0	1	7	2	14	12	15	1	0	1	4	70
T	27	9	5	19	5	28	24	32	5	0	6	7	167

3. *Salatura melanippus indicus* (FRUHSTORFER) (fig. 3, ♂ ♀)

♂ ♀. Separable from *S. genutia* as follows. Upperside, marginal and anterior black border of greater extent. Subapical white band divided into separate elongate spots. In continental races the upperside of hindwing without trace of orange. Specimens from S. Viet-Nam more or less show a melanic tendency compared with Burmese and Malayan forms.

Loc. Ba Diem, Thu duc, Dinh Quan, Trang Bom, Lai Thieu, etc. Common.

4. *Salatura affinis malayana* (FRUHSTORFER) (fig. 4, ♂ ♀)

♂ ♀. Upperside, fore wing similar to *S. melanippus* but white band broader and each spot conjoined. Hindwing with a spacious white area including greater part of cell. Veins in the white area not heavily blackened. Underside, hindwing with brownish wedge-shaped post-discal spots. Outside the continent very variable species with wide range of distribution. The species is always confined to coastal areas.

Loc. Cap St. Jaques. Local and not common.

5. *Tirumala limniace limniace* (CRAMER) (fig. 5, ♂, form *limniace*; ♀, form *leopardus*)

♂ ♀. Upperside, black with bluish-white markings. Fore wing, cell with single basal streak, space

1b basal streak usually devided by black stripe (form *limniace*), or not devided (form *leopardus* BUTLER). Male sex patch in area 1c, underside hind wing, flap-like through genus *Tirumala*. Form *leopardus* occurs rarely in S. Viet-Nam though predominant from Burma to westwards.

Loc. Cholon, Trang Bom, Nhatrang, etc. Common.

6. *Tirumala gautama gautama* (MOORE) (fig. 6, ♂)

♂♀. Upperside, similar to *T. limniace*. Fore wing, cell with two basal streaks joined at the base.

Loc. Dinh Quan, Trang Bom. Uncommon.

The species has rather limited range of distribution in the vicinity of South Viet-Nam, its most southern extension being Langkawi Islands.

7. *Tirumala hamata septentrionis* (BUTLER) (fig. 7 ♂)

♂♀. Upperside, similar to preceding two species, but markings narrower and bluer. Fore wing, cell with single basal streak, in space 1b, two streaks near base far detached and upper one rather oval.

Loc. La Nga, Trai Bi, Dinh Quan, Trang Bom. Common.

8. *Parantica aglea melanoides* (MOORE) (fig. 8, ♂)

♂♀. Fore wing vein 11 anastomosed with vein 12, an exceptional venation in genus *Parantica*. Upperside, black with bluish-white markings, cells predominantly bluish-white with narrow streaks. Male with two sex patches near inner margin of hind wing.

Loc. La Nga, Ben Nom, Dinh Quan, Col de Blao (alt. 1,000 m), Dalat (alt. 1,500 m), etc. Common.

9. *Parantica agleoides agleoides* (C. & R. FELDER) (fig. 9, ♂)

♂♀. Both wings markings shorter and narrower than *P. aglea*. Cells with broader black streaks. Smaller species.

Loc. Cholon, Thu Duc, Phu Lam, Trang Bom, etc. Locally common. Monthly capture as follows.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	T
♂	30	8	9	4	6	1	6	0	1	0	4	13	82
♀	38	10	2	1	0	1	2	2	0	0	1	12	69
T	68	18	11	5	6	2	8	2	1	0	5	25	151

10. *Parantica aspasia aspasia* (FABRICIUS) (fig. 10, ♂♀)

♂♀. Both wings bluish grey with distal parts broadly black, basal area bright yellow. Hind wing, cell without any black streak. Smaller species.

Loc. Ben Nom, Dinh Quan, Trang Bom. Locally not rare.

11. *Parantica melaneus plataniston* (FRUHSTORFER) (fig 11, ♂)

♂♀. Upperside, fore wing black, hind wing blackish brown, both with bluish-white sub-hyaline markings. Usually without cell streak.

Loc. Blao (alt. 1,000 m), Bobla (alt. 1,000 m), Ding Quan, Banmethuot, etc. Not common.

12. *Parantica sita sita* (KOLLAR) (fig. 12, ♂)

♂♀. Upperside, fore wing black, hind wing chest-nut brown, both with spacious bluish white sub-hyaline markings. Usually hind wing cell with a forked streak. Three males in INOUE's collection. Two males have the narrower sub-hyaline markings than North Indian forms, but one male is inseparable from them.

Loc. Dalat (alt. 1,500 m), Bobla (alt. 1,000 m). Rare.

13. *Radena similis persimilis* (MOORE) (fig. 13, ♂ ♀)

♂ ♀. Upperside, black with sub-hyaline bluish-white markings. Fore wing, cell with basal streak and outwardly slightly dented distal spot, basal spot in space 2 rather rounded.

In genus *Radena* fore wing with vein 11 anastomosed with vein 12, and male with specialized scales along vein 1a and 1b on the upperside of hindwing.

Loc. Cholon, Cap St. Jaques, Gia Ray, Ba Diem, etc. Common.

Monthly capture as follows. The species is a dry season butterfly in South Viet-Nam.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	T
♂	38	2	1	0	2	4	0	2	0	0	16	14	79
♀	21	0	3	1	1	6	0	2	0	1	3	10	48
T	59	2	4	1	3	10	0	4	0	1	19	42	127

14. *Radena vulgaris contigua* (TALBOT) (fig. 14, ♂ ♀)

♂ ♀. Upperside similar to *R. similis*. Fore wing, termen slightly concaved, cell with basal streak and outwardly deeply indented distal spot, basal spot in space 2 narrow and wedge-shaped.

The subspecies, with the upperside of fore wing distinctly darker than hind wing, and on both wings semi-hyaline markings broader than ssp. *macrina*, the race found in P. Siam, S. Burma and Malaya. Ssp. *contigua* is limited to Viet-Nam, N. E. Thailand and Hainan, its most northern extension being Chiem Hoa, N. Viet-Nam.

Loc. Dalat, Thu Duc, Col de Blao, Bobla and Trang Bom. Local and not common, but numerous in Col de Blao.

15. *Euploea modesta modesta* BUTLER (fig. 15, ♂ ♀)

♂. Fore wing, excavate at end of vein 1b with no brand on upperside. Underside space 1b with narrow sex stripe and yellowish buff area below the stripe. Hind wing, with obscure hidden patch in the cell area perceptible with oblique or transmitted light.

♂ ♀. Smaller species with fore wing length less than 45 mm. Upperside dark velvety brown. Fore wing almost unmarked, and basal two-thirds or sometimes more, glossed with deep shining blue. Hind wing with submarginal and marginal series of prominent white spots.

This type of colouring is common to the races of five *Euploea* species found in South Viet-Nam. The type ranges from South Burma to Viet-Nam. Here, the type is called "Burmese pattern".

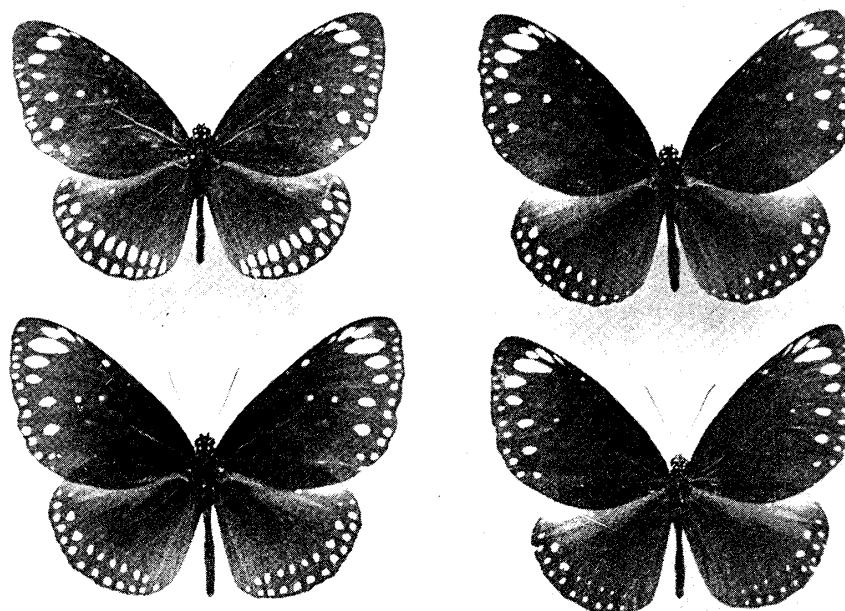
Loc. Dinh Quan, Trang Bom, Vo Dat. Locally common.

Monthly capture as follows.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	T
♂	5	2	3	6	24	17	9	1	0	5	7	0	79
♀	0	0	0	1	11	3	4	1	0	2	0	0	22
T	5	2	3	7	35	20	13	2	0	7	7	0	101

16. *Euploea crameri inouei*, ssp. nov. (fig. 16, above Holotype ♂, below Paratype ♀)

♂. Fore wing, upperside without brand. Underside with two blackish sex stripes in space 1b, the



Left above; *Euploea crameri inouei* subsp. nov., ♂ (S. Viet-Nam)
 Left below; *E. crameri olivacea* (Moore), ♂ (S. Burma)
 Right above; *E. crameri bremeri* C. & R. FELDER, ♂ (Langkawi Is.)
 Right below; *E. crameri bremeri* C. & R. FELDER, ♂ (Malaya)

two arranged to form a parallelogram.

♂♀. Both wings dark brown with clearly defined submarginal and marginal series of white spots.

In this new subspecies the submarginal series of white spots on the hind wing are rather oblong in shape, and very large, usually twice as large as those of marginal spots, which are also well developed. On the fore wing the subapical spot in space 6 is not so prominent as other continental subspecies.

The male of the new subspecies is also shown in figure (left, above) with males of ssp. *olivacea* (S. Burma) (left, below), ssp. *bremeri* (right, above) (Langkawi Is.) and ssp. *bremeri* (Malaya) (right, below).

Length of fore wings: 38–47 mm.

Holotype ♂, Trang Bom, 18 Feb. 1962. Paratypes; ♂, Vo Dat, 15 Mar. 1959; ♂, Trang Bom, 29 Aug. 1961; ♂, Lai Thieu, 18 Mar. 1962; ♂, Thu Duc, 9 Sept. 1962; ♀, Dinh Quan, 3 July 1960.

R. MÉTAYE (1958) recorded *Euploea core core* (CRAMER) from South Viet-Nam, but judging from the figure it does not belong to *core*, but belongs to *crameri*.

17. *Euploea redtenbacheri camaralzeman* BUTLER (fig. 17, ♂♀)

♂. Fore wing, upperside without brand. Underside without sex stripe in space 1b.

♂♀. With "Burmese pattern". Fore wing cell with recurrent vein longer and more prominent than other species. The second largest *Euploea* after *E. phaenareta*.

Loc. Banmethuot, Bobla, Trang Bom. Rare.

18. *Euploea* species (fig. 18, ♂♀)

♂. Fore wing, upperside without brand, underside with two blackish sex stripes in space 1b with their arrangement as in *E. crameri*.

♂♀. Upperside olive-brown, outer half not paler with submarginal and marginal series of pure

white spots. Underside paler with much same spotting except for cell spots and additional discal spots. Fore wing cell with recurrent vein.

It may represent an intermediate between *E. crameri* and *E. core*, its specific entity being matter of doubt. As to the identity of the female with the male figured, no proof is available except its facies. Fore wing length: ♂, 44 mm; ♀, 46 mm.

Loc. ♂, Blao; ♀, Dinh Quan. One pair only.

19. *Euploea core godartii* LUCAS (fig. 19A, ♂ ♀; 19B, ♂♂, Variation forms)

♂. Fore wing, upperside with narrow brand variable in length, underside, in space 1b, pale long sex stripe with brown scales almost covering it. Cell with recurrent vein in usual length in both sexes.

♂ ♀. Upperside, chocolate brown to olive brown with distal half of fore wing paler and usually violet washed towards apex. Hind wing with submarginal and marginal series of dusky white spots, which usually almost complete, but sometimes obsolete. In extremely varied form these spots are pure white.

Mixed in typical and predominant form several rarer forms are found, and some of them were described as distinct species. But they can be united to the standard form by intermediates. Conspicuous and important ones among them are:

Form *layardi* DRUCE. (fig. 19B above ♂)----Upperside of fore wing without violet suffusion.

Form *defigurata* FRUHSTORFER. (fig. 19A above ♂)----Hind wing with marginal spots obsolete.

Form *circuita* (SWINHOE). (fig. 19B below, ♂, intermediate with *layardi*)----Both wings with submarginal and marginal series of white spots well developed and without dust, somewhat resembles *E. crameri*.

Loc. Saigon, Cholon, Dinh Quan, etc. Very common.

20. *Euploea algea limborgii* MOORE (fig. 20, ♂ ♀)

♂. Fore wing, upperside with long and broad brand extending to below the origin of vein 2.

♂ ♀. Recurrent vein rather long and prominent. Wings elongate with "Burmese pattern".

Loc. Trang Bom, Dinh Quan. Fairly common.

21. *Euploea doubledayi doubledayi* C. & R. FELDER

♂ Fore wing, upperside with a narrow brand. Underside, the whole space 1b darkened. Hind wing, upperside cell area strongly blackened with specialized scales.

♂ ♀. Upperside velvety black. Hind wing, submarginal spots pure white and prolonged to streaks. Closely allied species to the next, but larger. Fore wing length 46 mm in the smallest male, female much larger. (Description based upon Burmese specimens.)

Loc. Central Viet-Nam (MÉTAYE).

22. *Euploea eyndhovii aesatia* FRUHSTORFER (fig. 22, ♂ ♀)

♂ ♀. Taxonomically no difference from *E. doubledayi*, only smaller with fore wing length usually around 42 mm in male, and fore wing with no spot in both sexes. Hind wing spots dusky, and sometimes obscure.

Loc. Blao, Bao Liet, Dinh Quan, Trang Bom, etc. Fairly common.

23. *Euploea sylvester harrisii* C. & R. FELDER (fig. 23, ♂ ♀)

♂ Fore wing, dorsum nearly straight, upperside with two long sex brands.

♂ ♀. Upperside, "Burmese pattern", but fore wing glossed with brilliant blue entirely, and usually submarginal series of bluish spots present.

Loc. Blao, Trang Bom, Dinh Quan, La Nga, etc. Common.

24. *Euploea mulciber mulciber* (CRAMER) (fig. 24, ♂♀)

♂. Upperside, fore wing without brand. Hind wing with a small pale yellow, wedge-shaped, raised patch in cell, and with prominent dark area above vein 4.

Fore wing with blue gloss entirely in ♂, partially in ♀.

Loc. Cholon, Bolba, etc. Very common.

Monthly capture as follows.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	T
♂	15	4	5	2	27	18	15	10	28	5	6	8	143
♀	0	3	1	0	5	2	1	4	6	1	1	1	25
T	15	7	6	2	32	20	16	14	34	6	7	9	168

25. *Euploea tulliolus dehaani* (LUCAS) (fig. 25, ♂♀)

♂. Upperside, fore wing without brand, hind wing with pale yellow raised patch not extending below middle of cell.

♂♀. Without recurrent vein in cell. smallest species. In this subspecies upperside pattern somewhat like *E. mulciber* ♂, with whitish discal spots. A pale blue spot present in space 1b, but underside without oval sex mark found in *E. leucostictos*.

Loc. Dinh Quan, Trang Bom. Local.

26. *Euploea phaenareta drucei* (MOORE) (fig. 26, ♂)

♂. Upperside, fore wing without brand, hind wing pale yellow raised patch extending below middle of cell.

♂♀. Without recurrent vein in cell. Largest species. Two males collected in the following localities have the fore wing lengths 61 mm and 63 mm respectively. Upperside olive brown with faint purple lustre, spottings as shown in figures.

MÉTAYE did not include this species in his list. HULSTAERT (1931) referred to *vitrina*, the Burmese race of *E. phaenareta*, taken in Cochin China, with *castelnaui*=*phoebus*, the Malayan race. But two males before me accord with the features of *drucei*, the Siamese race. Fore wing, whitish spots not increase in size towards apex as in *castelnaui*, and without pale violet suffusion over the apical area as in *vitrina*.

Loc. Cholon, Lai Thieu. Two males only.

27. *Euploea midamus chloe* (GUÉRIN) (fig. 27A, ♂♀; 27B, ♂♂ Variation forms)

♂. Upperside, fore wing with narrow, long, black brand about 10 mm in length, hind wing with pale yellowish raised patch in cell area.

♂♀. Usually without recurrent vein in fore wing cell, but sometimes with very short one. Upperside typical "Burmese pattern". Very variable in spotting. Forms with melanic tendency (e. g. form *eclecta*, figured in 27B) are not rare, together with individuals with well spotted fore wing as in nominate race of South China.

Loc. Dinh Quan, Vo Dat, La Nga, Trang Bom, Col de Blao, etc. Fairly common.

28. *Euploea klugii erichsonii* C. & R. FELDER (fig. 28, ♂♀)

♂. Upperside, fore wing with small lenticular brand not scaled blue, hind wing with pale yellowish raised patch in cell area.

♂♀. Without recurrent vein in fore wing cell.

Upperside, olive brown, distinctly paler in distal area. Marginal series of whitish spots well de-

finned and usually complete.

Loc. Thac Trian, Ba Diem, Trang Bom, Lai Thieu, Cap St. Jaques. Common.

29. *Euploea diocletianus diocletianus* (FABRICIUS) (fig. 29, ♂ ♀)

♂. Upperside, fore wing with small blue-scaled brand, hind wing with whitish raised patch in cell area.

♂ ♀. Without recurrent vein in fore wing cell. Upperside fore wing with large white patch at cell end. Male with blue gloss, female almost without blue gloss.

Loc. Dinh Quan, Trang Bom, Banmethuot, Col de Blao, etc. Common.

Monthly capture as follows.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	T
♂	7	4	4	4	18	10	10	9	2	4	6	3	81
♀	1	0	0	1	0	1	0	0	1	0	0	1	5
T	8	4	4	5	18	11	10	9	3	4	6	4	86

The female seems to be very rare throughout its range.

Literature

- CORBET, A. S. (1942). Revisional notes on the genus *Euploea* F. Ann. Mag. nat. Hist. (xi), 9.
 CORBET, A. S. and H. M. PENDLEBURY (1956). The butterflies of the Malay Peninsula. 2nd edition. London.
 GODFREY, E. J. (1930) A revised list of the butterflies of Siam, with notes on their geographical distribution. J. Siam Soc. nat. Hist. suppl. (vii), 4.
 MÉTAYE, R. (1958). Les Danainae du Viet-Nam. Saigon.
 MOULTON, J. G. (1921). Notes on Malaysian butterflies. Part I (Danainae). J. F. M. S. Mus., 10.
 SHIRÔZU, T. (1960). Butterflies of Formosa in colour. Osaka.
 SWINHOE, C. (1903). New species of Eastern and African Lepidoptera. Ann. Mag. nat. Hist. series 7, (ii), 65.
 TALBOT, G. (1939). *Danaus aventina* (CRAM.) and *D. vulgaris* (BUTL.). Entomologist, 72.
 — (1940). Revisional notes on the genus *Idea* MOORE. Proc. R. ent. Soc. Lond. (B), 9.
 — (1941). Revisional notes on the genus *Ideopsis* FABR. Trans. R. ent. Soc. Lond., 91.
 — (1943). Revisional notes on the genus *Danaus* KLUK. Trans. R. ent. Soc. Lond., 93.
 — (1947). Fauna of British India, including Ceylon and Burma. Butterflies, II. London.
 FRUHSTORFER H. (1927). Danainae of the Indo-australian Region. In SEITZ, Macrolepidoptera of the world, 9.

Explanations of Figures

The figure is under the same serial number with the list of species.

- Fig. 3. *Salatura melanippus indicus* (FRUHSTORFER), ♂ ♀
 Fig. 4. *Salatura affinis malayana* (FRUHSTORFER), ♂ ♀
 Fig. 5. *Tirumala limniace limniace* (CRAMER),
 above, form *limniace* (CRAMER), ♂
 below, form *leopardus* (BUTLER) ♀
 Fig. 6. *Tirumala gautama gautama* (MOORE), ♂
 Fig. 7. *Tirumala hamata septentrionis* (BUTLER), ♂
 Fig. 8. *Parantica aglea melanoides* (MOORE), ♂

- Fig. 9. *Parantica agleoides agleoides* (C. & R. FELDER), ♂
 Fig. 10. *Parantica aspasia aspasia* (FABRICIUS), ♂ ♀
 Fig. 11. *Parantica melaneus plataniston* (FRUHSTORFER), ♂
 Fig. 12. *Parantica sita sita* (KOLLAR), ♂
 Fig. 13. *Radena similis persimilis* (MOORE), ♂ ♀
 Fig. 14. *Radena vulgaris contigua* (TALBOT), ♂ ♀
 Fig. 15. *Euploea modesta modesta* BUTLER, ♂ ♀
 Fig. 16. *Euploea crameri inouei* MORISHITA, ♂, (Holotype); ♀, (Paratype)
 Fig. 17. *Euploea redtenbacheri camaralzeman* BUTLER, ♂ ♀
 Fig. 18. *Euploea* species, ♂ ♀
 Fig. 19A. *Euploea core godartii* LUCAS, ♂ ♀
 Fig. 19B. Ditto, variation forms,
 above, form *layardi* DRUCE, ♂
 below, intermediate between above and form *circuita* (SWINHOE), ♂
 Fig. 20. *Euploea algea limborgii* MOORE, ♂ ♀
 Fig. 22. *Euploea eyndhovii aesatia* FRUHSTORFER, ♂ ♀
 Fig. 23. *Euploea sylvester harrisii* C. & R. FELDER, ♂ ♀
 Fig. 24. *Euploea mulciber mulciber* (CRAMER), ♂ ♀
 Fig. 25. *Euploea tulliolus dehaani* (LUCAS), ♂ ♀
 Fig. 26. *Euploea phaenareta drucei* (MOORE), ♂, upperside and underside
 Fig. 27. *Euploea midamus chloe* (GUÉRIN), ♂ ♀
 Fig. 27B. Ditto, variation forms,
 above, form *eclecta* (SWINHOE) with aberrant brand, ♂
 below, ditto, ♂
 Fig. 28. *Euploea klugii erichsonii* C. & R. FELDER, ♂ ♀
 Fig. 29. *Euploea diocletianus diocletianus* (FABRICIUS), ♂ ♀

Catopsilia scylla found in Borneo

KAZUHIKO MORISHITA

2-2-16, Shinjuku, Zushi City, Kanagawaken

Catopsilia scylla (LINNAEUS), with its orange-yellow hind wing, is one of the conspicuous Pierid butterflies in the south-east Asia. The species is distributed from south Burma, through Malay Archipelago to Australia, but it is considered to be absent from Borneo.

I found and captured this handsome species on the occasion of my visit to North Borneo in August, 1968, as noted below.

The collected males, rather large and with prominent cell end spot on the fore wing above, are distinct from the race found in Singapore and Malaya, but the subspecific name should be discussed after discovery of the female.

Notes

2 ♂♂, Inanam, Sabah, N. Borneo, Aug. 4, 1968, K. MORISHITA leg.